7.3

HW p363 11-15 odd 18-20, 23, 27, 29 4 groupings

11. $2x^4 + 6x^2 - 10$

$x^2 = u$

$2u^2 + 6u - 10$

13. $11n^6 + 44n^3$

$u = n^3$

$11u^2 + 44u$

15. $7x^{1/9} - 3x^{1/3} + 4$

not poss.

23. $x^3 + 729$

$(x+9)(x^2 - 9x + 81) = 0$

$x = -9$ $\quad \frac{9 \pm \sqrt{81 - 4(1)(81)}}{2}$

$\frac{9 \pm \sqrt{-243}}{2}$ $\quad 243 = 3 \cdot 81$

$\left\{-9, \frac{9 \pm 9i\sqrt{3}}{2}\right\}$

27. $y - 19\sqrt{y} = -60$

$u = \sqrt{y}$

$u^2 - 19u + 60 = 0$

$(u-15)(u-4)$

$u = 15 \quad u = 4$

$\sqrt{y} = 15 \quad \sqrt{y} = 4$

$y = 225 \quad y = 16$

$\{225, 16\}$

$225 - 19(15) = -60$ ✓

$16 - 19(4) = -60$ ✓

29. $s^3 + 4s^2 - s - 4 = 0$

$s^2(s+4) - 1(s+4) = 0$

$(s^2 - 1)(s+4) = 0$

$s^2 = 1 \quad s = -4$

$s = \pm 1$

$\{-4, -1, 1\}$